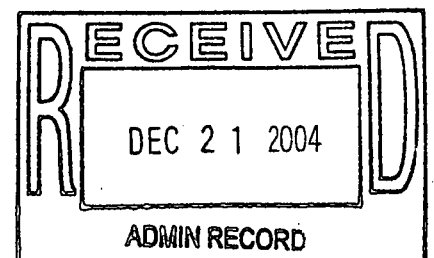


December 15, 2004

Note to Administrative Record file for Original Landfill, IHSS 115

From Carol Deck, Kaiser-Hill General Counsel's Office

The attached document, "Memorandum, Analysis of Potential Relevant and Appropriate Requirements for Closure of the Original Landfill" and the supporting table, "Relevant and Appropriate Analysis for OLF Cover," were prepared for discussion purposes and do not necessarily reflect the positions of the RFCA parties. The final ARARs will be found in the IM/IRA for the Original Landfill.



OU05-A-000735

Relevant and Appropriate Analysis for OLF Cover

This evaluation is conducted with the understanding that the proposed containment accelerated action for the OLF includes a cover that will be designed and constructed to meet any Relevant and Appropriate requirements (ARARs) of the cover performance standards in 40 CFR 265.310(a)(1)-(5). A summary of this evaluation for 265.310(a) is presented in the Table 1 below.

Table 1.

40 CFR 265.310 (a) Cover Performance Standards	ARAR Determination
(a)(1): ... cover designed and constructed to provide long-term minimization of migration of liquids through the closed landfill;	Not Relevant and Appropriate (See Table 2)
(a)(2) Function with minimum maintenance;	Potentially Relevant and Appropriate (See Table 3)
(a)(3) Promotes drainage and minimizes erosion or abrasion of the cover;	Potentially Relevant but not Appropriate (See Table 4)
(a)(4) Accommodates settling and subsidence so that the cover's integrity is maintained; and	Potentially Relevant and Appropriate (See Table 5)
(a)(5) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.	Not Relevant and Appropriate (See Table 6)

Tables 2 through 6 contain the ARARs evaluation of the 40 CFR 265.310(a) (1)-(5) design/construction performance standards for a hazardous waste landfill cover, using the factors in 40 CFR 300.400 (g). The first step for each evaluation factor is to determine if any of the five performance standards are Relevant. That is, whether the standard is intended to address situations sufficiently similar to or consistent with the situation at the OLF, such that it should be applied to address the situation. Any performance standard determined to be Relevant is then evaluated to determine if it is also Appropriate. That is, whether the standard is well suited to conditions or circumstances present at the OLF. These are then qualitatively evaluated to determine if overall the performance standard attributes weigh in favor of identification of the standard as potentially Relevant and Appropriate.

As a result of this evaluation, 40 CFR 265.310 (a)(2) and (a)(4) are carried forward into the ARARs section of the Original Landfill IM/IRA.

Table 2.

Requirement (proposed ARAR): 40 CFR 265.310 Closure (a)(1) ...cover designed and constructed to provide long-term minimization of migration of liquids through the closed landfill;			
CERCLA ARAR Factors	Requirement Evaluated Against CERCLA Criteria	Relevant? (Is the problem or situation at the OLF sufficiently similar to the situation addressed by this performance standard?)	Appropriate? (If Relevant, is the use of the performance standard requirement well suited to the particular conditions at the OLF?)
300.400 (g)(2)(i): Purpose of the requirement	<p>Is its use at the OLF consistent with its purpose?</p> <p>The purpose is to minimize infiltration of precipitation that would cause migration of liquids that are generated by or come in contact with landfilled hazardous waste. This addresses two main pathways of exposure to hazardous wastes and constituents. 1) Liquids can promote decomposition of buried waste, potentially causing gas generation or changes in the "structural" properties of the buried waste that could negatively affect containment integrity that may actually promote long-term infiltration. 2) Liquids entrain or contain soluble contaminants allowing them to move and potentially reach groundwater.</p> <p>See the evaluation of the design criteria for prevention of settling and subsidence in Table 4, which addresses the influence of water affecting stability.</p>	<p>No; the situation at the OLF is not sufficiently similar to the situation addressed by this performance standard. That is, the OLF has been in place for over 35 years with minimal soil cover. Yet, groundwater monitoring data do not indicate that migration of liquids through the landfill has caused ground water contamination migration outside the landfill. Also, there is no significant gas generation from waste decomposition. The situation at the OLF is that, due to uneven waste placement, settling, and erosion of the soil cover, waste has become exposed to the surface. Therefore, the purpose of the OLF cover is not to address liquid migration problems but to adequately contain the disposed waste. This will be achieved by a stable cover that prevents direct contact with waste and accommodates surface run-on and run-off to minimize erosion.</p>	Not Required.
300.400(g)(2)(ii): Media regulated or affected by the requirement	<p>Is the media contaminated or affected at the OLF consistent with the media regulated by the requirement?</p> <p>Medium potentially affected is groundwater.</p>	<p>No; There is some limited, low-concentration of contamination in ground water within/below the OLF that likely originated from the disposed wastes. However, this contamination does not appear to be significantly migrating even</p>	Not Required

Requirement (proposed ARAR): 40 CFR 265.310 Closure (a)(1) ...cover designed and constructed to provide long-term minimization of migration of liquids through the closed landfill;			
CERCLA ARAR Factors	Requirement Evaluated Against CERCLA Criteria	Relevant? (Is the problem or situation at the OLF sufficiently similar to the situation addressed by this performance standard?)	Appropriate? (If Relevant, is the use of the performance standard requirement well suited to the particular conditions at the OLF?)
		though the over 35 year-old minimal soil cover likely has not prevented infiltration or minimized migration. The groundwater is not a source of drinking water supply and the low levels of contamination measured in a few limited areas in groundwater in the OLF does not appear to pose a threat to surface water quality. There is no significant generation of gas from OLF disposed waste. The conditions at the OLF are not due to infiltration/migration, but rather due to uneven waste placement, settling, and erosion of the soil cover and waste becoming exposed to the surface.	
300.400(g)(2)(iii): Substances regulated by the requirement.	Are the substances involved at the OLF similar to or consistent with those regulated by this performance standard? The requirement regulates covers for RCRA Hazardous Waste disposed in landfills, such that liquid migration through the hazardous wastes in the landfill is minimized.	No; there is no evidence that hazardous waste was disposed at the landfill. Rather, the waste is similar to that disposed in sanitary waste landfills. Such sanitary waste is recognized as possibly containing some hazardous substances, but the waste in the OLF does not appear to present a significant or "high hazard" situation from the waste disposed.	Not Required.
300.400(g)(2)(iv): The actions or activity regulated by the requirement.	Is the accelerated action contemplated at the OLF and the duration of the activity consistent with the action regulated by the requirement? The requirement regulates design and construction of a cover that achieves final	No; the accelerated action contemplated provides for adequate long-term containment and does not depend on minimizing migration of liquids through the waste. Long-term containment will be achieved by a stable cover that prevents direct contact with waste and	Not Required.

Requirement (proposed ARAR): 40 CFR 265.310 Closure (a)(1) ...cover designed and constructed to provide long-term minimization of migration of liquids through the closed landfill;			
CERCLA ARAR Factors	Requirement Evaluated Against CERCLA Criteria	Relevant? (Is the problem or situation at the OLF sufficiently similar to the situation addressed by this performance standard?)	Appropriate? (If Relevant, is the use of the performance standard requirement well suited to the particular conditions at the OLF?)
	closure of a hazardous waste landfill to achieve long-term minimization of migration of liquids through the hazardous wastes	accommodates surface runoff to minimize erosion. This is consistent with the regulatory approach for containment of hazards from disposed wastes in a sanitary landfill.	
300.400(g)(2)(v): Any variances, waivers, or exemptions of the requirement.	<p>Are there any circumstances at the OLF that would allow a variance, waiver or exemption?</p> <p>This factor may be pertinent (e.g., 40 CFR 265.110(d)) but will not be evaluated at this time and will not be repeated in the remaining tables.</p>	NA	NA
300.400(g)(2)(vi): The type of place regulated.	<p>Is the requirement consistent with the physical location at the OLF?</p> <p>This factor pertains to a determination of relevance and appropriateness as a location-specific requirement, and is not pertinent to the current analysis. (This factor will not be repeated in the remaining tables.)</p>	NA	NA
300.400(g)(2)(vii): The type and size of structure or facility regulated.	<p>Is the type and size of the OLF consistent with the requirement?</p> <p>The type of structure regulated is a hazardous waste landfill cover of any size and the size could be larger than the 20-acre OLF.</p>	No; because there is no indication that migration of liquids presents a hazard at the OLF.	Not Required.
300.400(g)(2)(viii): Any consideration of use or potential use of affected resources in	Is there any use or potential use of resources involved at the OLF consistent with the requirement? A cover protects groundwater as a drinking water source.	No; groundwater is not a potential source of drinking water at RFETS.	Not Required

Requirement (proposed ARAR): 40 CFR 265.310 Closure (a)(1) ...cover designed and constructed to provide long-term minimization of migration of liquids through the closed landfill;			
CERCLA ARAR Factors	Requirement Evaluated Against CERCLA Criteria	Relevant? (Is the problem or situation at the OLF sufficiently similar to the situation addressed by this performance standard?)	Appropriate? (If Relevant, is the use of the performance standard requirement well suited to the particular conditions at the OLF?)
the requirement.	(This factor will not be repeated in the remaining tables.)		
Conclusion: As a result of this review, 40 CFR 265.310(a)(1) is not relevant and appropriate to the OLF.			

Table 3.

Requirement (proposed ARAR): 40 CFR 265.310 Closure (a)(2) Function with minimum maintenance;			
CERCLA ARAR Factors	Requirement Evaluated Against CERCLA Criteria	Relevant? (Is the problem or situation at the OLF sufficiently similar to the situation addressed by this performance standard?)	Appropriate? (If Relevant, is the use of the performance standard requirement well suited to the particular conditions at the OLF?)
300.400 (g)(2)(i): Purpose of the requirement	<p>Is its use at the OLF consistent with its purpose?</p> <p>The function of the cover is to meet the other four cover design criteria: minimize liquid migration; promote drainage and minimize erosion or abrasion; accommodate settling and subsidence; and, meet the permeability standard. These are evaluated in Tables 2 and 4-6 respectively. The purpose of this requirement is to favor designs that once constructed do not depend on continual active maintenance to meet the criteria.</p>	<p>Yes; the situation at the OLF is sufficiently similar to the situation addressed by this performance standard. As DOE's presence at the site decreases, a cover that functions with minimum maintenance is preferred. The proposed soil cover requires minimum maintenance since it will accommodate surface run-on and runoff to minimize erosion or abrasion and accommodate potential settling and subsidence.</p>	<p>Yes, this requirement is well suited to the OLF in that a soil cover will be designed for minimum maintenance.</p>
300.400(g)(2)(ii): Media regulated or affected by the requirement	<p>Is the media contaminated or affected at the OLF consistent with the media regulated by the requirement?</p> <p>The medium potentially affected by a cover that will not function properly with only minimal maintenance is groundwater.</p>	<p>No; See Table 2.</p>	<p>Not Required</p>
300.400(g)(2)(iii): Substances regulated by the requirement.	<p>Are the substances involved at the OLF similar to or consistent with those regulated by this performance standard?</p> <p>The requirement regulates covers for RCRA hazardous waste disposed in landfills. The cover must function, i.e., meet performance standards with minimal maintenance.</p>	<p>No; See Table 2.</p>	<p>Not Required.</p>

Requirement (proposed ARAR): 40 CFR 265.310 Closure (a)(2) Function with minimum maintenance;			
CERCLA ARAR Factors	Requirement Evaluated Against CERCLA Criteria	Relevant? (Is the problem or situation at the OLF sufficiently similar to the situation addressed by this performance standard?)	Appropriate? (If Relevant, is the use of the performance standard requirement well suited to the particular conditions at the OLF?)
300.400(g)(2)(iv): The actions or activity regulated by the requirement.	<p>Is the accelerated action contemplated at the OLF and the duration of the activity consistent with the action regulated by the requirement?</p> <p>The action regulated is maintenance of a cover, which includes making repairs to the cover as necessary to correct the effects of settling, subsidence, erosion or other events.</p>	Yes; maintenance of a soil cover over the OLF will be required.	Yes; a cover over the OLF will include erosion control and it will be designed to promote runoff of precipitation and accommodate settling and subsidence. These design features may require maintenance to properly function.
300.400(g)(2)(vii): The type and size of structure or facility regulated (under this requirement).	<p>Is the type and size of the OLF consistent with the requirement?</p> <p>The requirement is not dependent on the size or type of structure.</p>	Yes; As DOE's presence at the site decreases, a cover that functions with minimum maintenance is preferred.	Yes
Conclusion: As a result of this review, 40 CFR 265.310(a)(2) is potentially relevant and appropriate to the OLF.			

Table 4.

Requirement (proposed ARAR): 40 CFR 265.310 Closure (a)(3) Promotes drainage and minimizes erosion or abrasion of the cover;			
CERCLA ARAR Factors	Requirement Evaluated Against CERCLA Criteria	Relevant? (Is the problem or situation at the OLF sufficiently similar to the situation addressed by this performance standard?)	Appropriate? (If Relevant, is the use of the performance standard requirement well suited to the particular conditions at the OLF?)
300.400 (g)(2)(i): Purpose of the requirement	<p>Is its use at the OLF consistent with its purpose?</p> <p>The purpose of this requirement is to construct a cover over a hazardous waste landfill that promotes drainage and minimizes erosion or abrasion of the cover material. This is in order to preserve the cover integrity to prevent contact with waste.</p>	Yes; while the disposed waste is not hazardous waste the cover must adequately contain the OLF waste to prevent exposing waste and intermingled soil for direct contact. This will be achieved by a stable cover.	Yes
300.400(g)(2)(ii): Media regulated or affected by the requirement	<p>Is the media contaminated or affected at the OLF consistent with the media regulated by the requirement?</p> <p>The medium affected by erosion or drainage of a cover is soil. Ultimately however, the medium potentially affected by damage to the cover (due to erosion or abrasion) is groundwater.</p>	No; (See Table 2).	Not Required
300.400(g)(2)(iii): Substances regulated by the requirement.	<p>Are the substances involved at the OLF similar to or consistent with those regulated by this performance standard?</p> <p>The requirement regulates covers for RCRA Hazardous Waste disposed in landfills, such that liquid migration through the hazardous wastes in the landfill is minimized.</p>	No; (See Table 2)	Not Required
300.400(g)(2)(iv): The actions or activity regulated by the requirement.	<p>Is the accelerated action contemplated at the OLF and the duration of the activity consistent with the requirement?</p> <p>The action is placing a cover, which promotes drainage and minimizes erosion, over a</p>	Yes; the accelerated action contemplated is a cover that is designed to promote surface runoff and minimize erosion.	Yes; a cover over the OLF that promotes drainage and minimizes erosion is well suited to provide physical containment of the disposed waste.

Requirement (proposed ARAR): 40 CFR 265.310 Closure (a)(3) Promotes drainage and minimizes erosion or abrasion of the cover;			
CERCLA ARAR Factors	Requirement Evaluated Against CERCLA Criteria	Relevant? (Is the problem or situation at the OLF sufficiently similar to the situation addressed by this performance standard?)	Appropriate? (If Relevant, is the use of the performance standard requirement well suited to the particular conditions at the OLF?)
	hazardous waste landfill.		
300.400(g)(2)(vii): The type and size of structure or facility regulated.	<p>Is the type and size of the OLF consistent with the requirement?</p> <p>This requirement is not dependent on the size or type of a cover for a hazardous waste landfill. Typically, in accordance with EPA guidance, covers that have a slope of 5% or less are considered acceptable to meet this requirement. However, this performance standard does not specify a particular slope requirement. Other slopes and designs may meet the criteria.</p>	<p>Yes; the OLF will have a cover designed to promote drainage, minimize erosion or abrasion of the cover to adequately contain the disposed wastes. Drainage characteristics must be considered in relation to cover degradation.</p>	<p>No; a 5% slope is not appropriate in relation to the OLF site because it would create other design and size issues that can only be solved in manner inconsistent with the OLF area. These include interference with Woman Creek Drainage and expected destruction of existing Preble's Meadow Jumping Mouse habitat and wetlands. Such a cover would require an inordinate amount of imported cover material in relation to the volume of waste contained. The physical location of the OLF is on a 19% slope, which promotes drainage, but cover maintenance may still be minimized for this slope, since the size of the cover will be much smaller than one that has a 5% or less slope.</p>
<p>Conclusion: As a result of this review, 6 CCR 1007-3 265.310(a)(3) is potentially relevant but not appropriate to the OLF. A slope that is substantially different than the existing 19% slope is not appropriate at the OLF. The OLF will have a cover designed to promote drainage and minimize erosion or abrasion, in accordance with the performance standards discussed in Table 3 (265.310(a)(2)), but it is not appropriate to construct a cover with a five percent slope.</p>			

Table 5.

Requirement (proposed ARAR): 40 CFR 265.310 Closure (a)(4) Accommodate settling and subsidence so that the cover's integrity is maintained;			
CERCLA ARAR Factors	Requirement Evaluated Against CERCLA Criteria	Relevant? (Is the problem or situation at the OLF sufficiently similar to the situation addressed by this performance standard?)	Appropriate? (If Relevant, is the use of the performance standard requirement well suited to the particular conditions at the OLF?)
300.400 (g)(2)(i): Purpose of the requirement	<p>Is its use at the OLF consistent with its purpose?</p> <p>The purpose of this requirement is to maintain the integrity of a cover over a hazardous waste landfill by accommodating settling and subsidence. Settling and subsidence of waste is dependent on a number of factors, including the type of waste and degree of soil compaction, time the waste had been in place, depth/weight of the cover, void spaces in waste, waste decomposition and natural stability of the area. Waste decomposition is affected by liquids in contact with the waste (both migrating and static) and commingling with or close proximity of "incompatible" waste.</p>	Yes; once the area is regraded and the containment cover is constructed, some settling of the fill material (consisting of waste and soil) may occur. Waste decomposition is not considered a significant factor in the cover design.	Yes; accommodating settling and subsidence will maintain the integrity of a soil cover and is well suited to the OLF. However, the OLF no longer has settling or subsidence concerns from the waste material since the waste has been in place for over 35 years. Also, the OLF contains primarily construction debris and commingled soil, which does not present a particularly difficult settling or subsidence problem. Recontouring of waste (if used as the preferred approach for providing a stable cover) will need to properly address settling and subsidence of the materials that are moved and regraded.
300.400(g)(2)(ii): Media regulated or affected by the requirement	<p>Is the media contaminated or affected at the OLF consistent with the media regulated by the requirement?</p> <p>The medium potentially affected is groundwater.</p>	No; (See Table 2)	Not Required
300.400(g)(2)(iii): Substances regulated by the requirement.	Are the substances involved at the OLF similar to or consistent with those regulated by this performance standard?	No; (See Table 2)	Not Required.

Requirement (proposed ARAR): 40 CFR 265.310 Closure (a)(4) Accommodate settling and subsidence so that the cover's integrity is maintained;			
CERCLA ARAR Factors	Requirement Evaluated Against CERCLA Criteria	Relevant? (Is the problem or situation at the OLF sufficiently similar to the situation addressed by this performance standard?)	Appropriate? (If Relevant, is the use of the performance standard requirement well suited to the particular conditions at the OLF?)
	The requirement regulates covers for RCRA Hazardous Waste disposed in landfills, such that settling and subsidence are accounted for to maintain cover integrity.		
300.400(g)(2)(iv): The actions or activity regulated by the requirement.	<p>Is the accelerated action contemplated at the OLF and the duration of the activity consistent with the requirement?</p> <p>The action is to accommodate settling and subsidence of a cover over a hazardous waste landfill for purposes of maintaining the integrity of the cover.</p>	Yes; a cover will be placed over the OLF and settling and subsidence will be addressed.	Yes; accommodating settling and subsidence will maintain the integrity of a cover and is well suited to the OLF. However, the settling or subsidence concerns from decomposition of the waste material does not appear to be a significant concern, after over 35 years with a minimal soil cover. Also, the OLF contains primarily construction debris and commingled soil, which does not present a particularly difficult settling or subsidence problem. Recontouring of waste (if used as the preferred approach for providing a stable cover) will need to properly address settling and subsidence of the materials that are moved and regraded.
300.400(g)(2)(vii): The type and size of structure or facility regulated.	<p>Is the type and size of the OLF consistent with the requirement?</p> <p>The type of structure regulated is a RCRA hazardous waste landfill cover of any size.</p>	Yes; the containment of the OLF waste will use a cover that must accommodate settling and subsidence.	Yes.
Conclusion: As a result of this review, 40 CFR 265.310(a)(4) is potentially relevant and appropriate to the OLF.			

Table 6.

Requirement (proposed ARAR): 40 CFR 265.310 Closure (a)(5) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.			
CERCLA ARAR Factors	Requirement Evaluated Against CERCLA Criteria	Relevant? (Is the problem or situation at the OLF sufficiently similar to the situation addressed by this performance standard?)	Appropriate? (If Relevant, is the use of the performance standard requirement well suited to the particular conditions at the OLF?)
300.400 (g)(2)(i): Purpose of the requirement	<p>Is its use at the OLF consistent with its purpose?</p> <p>The purpose of this requirement is to prevent the accumulation of water in the landfill, creating the "bathtub effect". The presence of static water could promote leaching of hazardous substances and waste decomposition, and could allow water to impact the cover should it begin to saturate cover materials from the bottom up. This criterion is similar to and supports the purposes of minimizing liquid migration through the closed landfill, evaluated in Table 2.</p>	No; the situation at the OLF is not sufficiently similar to the situation addressed by the performance standard because the OLF does not have a bottom liner. The natural subsoils present is the Rocky Flats Colluvium. There does not appear to be any impact from accumulation of water in the landfill for over 35 years that might have occurred without a cover meeting this criterion. (Note that the proposed cover needed to provide waste containment would tend to minimize infiltration compared to the current cover.)	Not Required.
300.400(g)(2)(ii): Media regulated or affected by the requirement	<p>Is the media contaminated or affected at the OLF consistent with the media regulated by the requirement?</p> <p>The medium potentially affected is groundwater.</p>	No; (See Table 2)	Not Required
300.400(g)(2)(iii): Substances regulated by the requirement.	<p>Are the substances involved at the OLF similar to or consistent with those regulated by this performance standard?</p> <p>The requirement regulates permeability of covers for RCRA Hazardous Waste disposed in landfills. The permeability affects the rate at which precipitation could penetrate the</p>	No; (See Table 2)	Not Required

Requirement (proposed ARAR): 40 CFR 265.310 Closure (a)(5) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.			
CERCLA ARAR Factors	Requirement Evaluated Against CERCLA Criteria	Relevant? (Is the problem or situation at the OLF sufficiently similar to the situation addressed by this performance standard?)	Appropriate? (If Relevant, is the use of the performance standard requirement well suited to the particular conditions at the OLF?)
	cover, potentially accumulating water.		
300.400(g)(2)(iv): The actions or activity regulated by the requirement.	<p>Is the accelerated action contemplated at the OLF and the duration of the activity consistent with the requirement?</p> <p>The action is placing a cover over a hazardous waste landfill in order to minimize the infiltration of precipitation into the landfill, which minimizes an accumulation of water.</p>	No; (See Table 2).	Not Required.
300.400(g)(2)(vii): The type and size of structure or facility regulated.	<p>Is the type and size of the OLF consistent with the requirement?</p> <p>This requirement is not dependent on the size of the landfill requiring a cover, but may affect the type of cover needed to meet the criterion.</p>	No; There does not appear to be any impact from accumulation of water in the landfill for over 35 years that might have occurred without a cover meeting this criterion. (Note that the proposed cover needed to provide waste containment would tend to minimize infiltration compared to the current cover.)	Not Required.
Conclusion: As a result of this review, 40 CFR 265.310(a)(5) is not relevant and appropriate to the OLF.			

Memorandum
Analysis of Potential Relevant and Appropriate Requirements for Closure of
the Original Landfill

Introduction

An accelerated action IM/IRA in accordance with the Rocky Flats Cleanup Agreement (RFCA) is being prepared for the Original Landfill (OLF). The IM/IRA proposes hot spot removal, site grading, and the presumptive remedy of containment as the accelerated action for the OLF. The proposed containment remedy employs a two-foot soil cover.

The IM/IRA identifies the closure requirements for the OLF. In the process of evaluating potential ARARs for a CERCLA action, a regulatory requirement is determined to be either applicable¹ or relevant and appropriate². Because the OLF did not receive waste after November 19, 1980, RCRA closure requirements are not applicable to the proposed action. The attached tables analyze whether RCRA closure requirements are potentially relevant and appropriate. As background for the ARARs analysis, the following two sections summarize waste disposal and conditions at the Original Landfill. This ARARs analysis is prepared in support of the IM/IRA.

Summary of Waste Disposal at the Original Landfill

There are no written records documenting the kinds of wastes disposed at the Original Landfill. It is believed that the OLF received mainly sanitary waste and construction debris, based on records that do exist and on interviews with former employees. Liquids such as

¹ *Applicable requirements* means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are ... more stringent than federal requirements may be applicable. 40 CFR 300.5.

² *Relevant and appropriate requirements* ... while not "applicable" ... address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are ... more stringent than federal requirements may be relevant and appropriate. 40 CFR 300.5.

solvents were burned in pits or sent off site. A significant number of other disposal areas were operating at the same time as the OLF, and records and sampling information show that wastes that would today be classified as hazardous were destined for disposal at these locations.

Because of the existence of these other areas and the records and other information about the hazardous wastes disposed there, it is unlikely that the Original Landfill was a primary depository for hazardous materials waste at the Rocky Flats or even that it received a significant amount of hazardous material.

Summary Description of the Original Landfill³

The OLF is located in the southwestern part of the RFETS Industrial Area and is adjacent to the Buffer Zone. The area of the OLF on which waste was disposed is located on a steep slope south of the alluvial pediment on which the Industrial Area is located and directly north of Woman Creek. An endangered species, the Preble's Meadow Jumping Mouse, has been captured along Woman Creek in the area of the Original Landfill, where a significant amount of suitable Preble's habitat occurs. In addition, because of the proximity to Woman Creek, the Original Landfill area is adjacent to natural, jurisdictional wetlands.

Beginning in the early 1950's, waste was spread over the south-facing hillside to fill in the area below the pediment edge. After disposal ceased in 1968, the waste was covered with a soil layer, but no liner or other collection barrier exists and any precipitation or groundwater passing through the waste migrates into underlying soil and groundwater.

The OLF has been in place for more than 35 years with a minimal soil cover. Groundwater monitoring data do not indicate that migration of liquids through the landfill has caused groundwater contamination to migrate outside the landfill. Because of uneven waste placement, settling, and erosion of the soil cover, some waste has been exposed to the surface.

Therefore, the purpose of the OLF cover is to adequately contain the waste, which will be achieved by a stable cover that prevents direct contact with the waste and accommodates surface water run-on and run-off to minimize erosion.

After hot-spot removal, regrading the site will eliminate ponding and provide for positive run-off and run-on control of stormwater. Reducing the existing surface slopes through regrading will also minimize or eliminate surface soil sloughing and erosion, and provide a structurally stable area to contain the waste materials. Adding a soil cover will eliminate the exposure of the waste materials at the surface of the OLF. The proposed action will minimize impacts to the habitat of the Preble's Meadow Jumping Mouse and Woman Creek and associated wetlands.⁴

Comparison of 40 CFR 300.400(g)(2) and 40 CFR 265.310(a) and Conclusions

The attached tables compare the factors of 40 CFR 300.400(g)(2) with the closure requirements of 40 CFR 265.310(a), and analyze which of the closure requirements are potentially relevant and appropriate and which are not. The analysis concludes that the infiltration requirements of 265.310(a)(1) and the permeability requirements of 265.310(a)(5) are not relevant and appropriate, primarily because groundwater impacts from the Original Landfill are minimal. The analysis further concludes that the requirements concerning the maintenance and integrity of the cover, 265.310(a)(2) and (4), are potentially relevant and appropriate. Finally, 265.310(a)(3), which addresses the slope and placement of a landfill cover, while potentially relevant, would not be appropriate because of the physical location and characteristics of the Original Landfill. Please refer to the attached tables for this analysis.

³ For more details, please refer to the draft IM/IRA, Section 2.

⁴ For more details, please refer to the draft IM/IRA, sections 6 and 7.